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- 1 6. The method of claim 3, wherein the mammalian embryonic stem cells are
2 human embryonic stem cells.
- 1 7. The method of claim 1, wherein the conditions that would promote tissue-
2 specific differentiation of the stem cells comprises culturing the first and second subcultures
3 in a differentiating medium.
- 1 8. The method of claim 1, wherein the conditions that would promote tissue-
2 specific differentiation of the stem cells comprises culturing the first and second subcultures
3 at about 37°C.
- 1 9. The method of claim 1, wherein the conditions that would promote tissue-
2 specific differentiation of the stem cells comprises culturing the first and second subcultures
3 in a humidified, carbon-dioxide containing incubator.
- 1 10. The method of claim 1, wherein the conditions that would promote tissue-
2 specific differentiation of the stem cells comprises culturing the first and second subcultures
3 for a time period of at least five days.
- 1 11. The method of claim 10, wherein the time period is at least seven days.
- 1 12. The method of claim 11, wherein the time period is between seven and
2 eighteen days.
- 1 13. The method of claim 1, wherein the first and second subcultures are cultured
2 in a microtiter plate.

1 14. The method of claim 1, wherein the step (E) of analyzing the cells in the first
2 and second subcultures for increased tissue-specific gene expression comprises isolating
3 mRNA from the first and second subcultures.

1 15. The method of claim 14, wherein total cellular RNA is isolated from the first
2 and second subcultures.

1 16. The method of claim 14, wherein the step (E) further comprises reverse-
2 transcribing the mRNA to create cDNA.

1 17. The method of claim 1, wherein the step (E) of analyzing the cells in the first
2 and second subcultures for increased tissue-specific gene expression comprises performing a
3 polymerase chain reaction (PCR).

1 18. The method of claim 14, wherein the isolated mRNA is immobilized on a
2 substrate.

1 19. The method of claim 18, wherein the substrate is contacted with a probe that
2 specifically hybridizes to the tissue-specific mRNA.

1 20. The method of claim 1, wherein the step (E) of analyzing the cells in the first
2 and second subcultures for increased tissue-specific gene expression is performing using gene
3 chip technology.